DeepReal
A Deep Learning Based 3D Advert Integration System

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Current advertisement approaches create a **disruptive user experience** for online streaming platforms.
We propose to **solve this problem** with a 3D Advertisement Creation System that enables users to **seamlessly insert** 3D objects into any user-generated video.
Overview of System - Core ML Operations

CNN based method for depth estimation

CNN based system for occlusion handling

CNN based system for background reconstruction

GAN for accurately estimating alpha mattes
Overview of System - Process

Input Video → Mono Depth Estimation → Plane Localization → Plane & Camera Tracking → Object Layer → 3D Model Render

Input Video → Interactive Rough Segmentation Mask → Mask Propagation → Foreground Matting

Input Video → Background Reconstruction

Object Layer → Foreground layer → Composite Output
Overview of System - User interface
Overview of System - Steps

Step 1 - Video Selection (Upload)

Step 2 - 3D Object Insertion

Step 3 - Occlusion Handling

Step 4 - Camera Tracking

Step 5 - Video Export
Inserting an object
Occlusion Handling
Output examples
我去把监控视频调出来
Thank you